DISCOVERIES AND
INVENTIONS - 1860
(L.L. #306)

DRAWER 5 EARLY SPEECHES 2/10/35

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Early Speeches of Abraham Lincoln, 1830-1860

“Discoveries and Inventions”

1858-1860

Excerpts from newspapers and other sources

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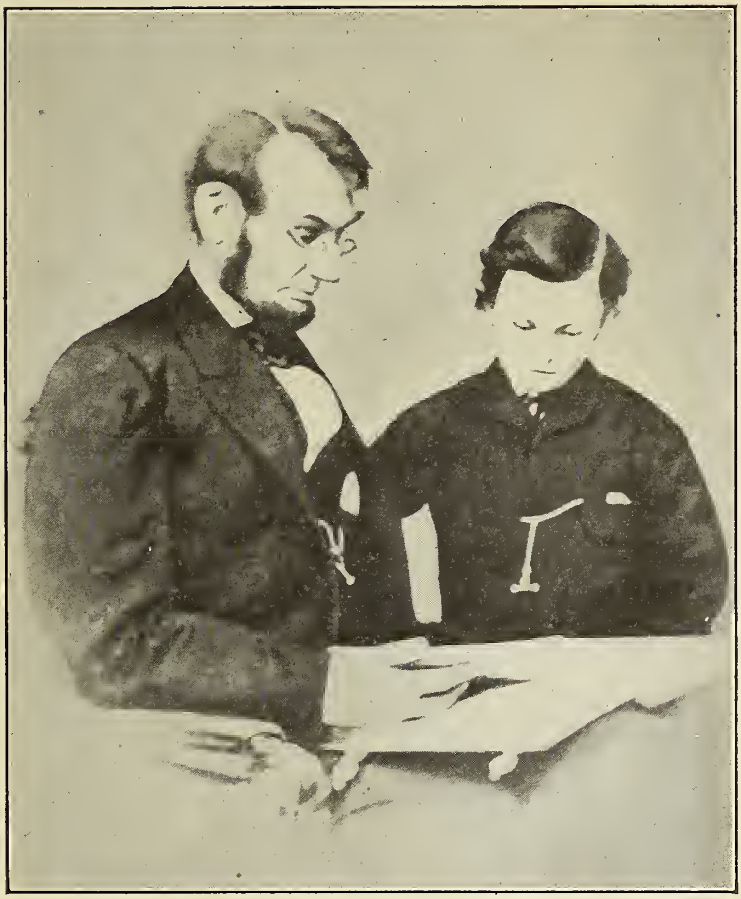
Sunset Magazine
February 1909



PRESIDENT LINCOLN AND HIS SON "TAD"

DISCOVERIES AND INVENTIONS, A HITHERTO UNPUBLISHED LECTURE BY ABRAHAM LINCOLN

EDITOR'S NOTE: This year, the centennial of the birth of Abraham Lincoln, the thought of the Nation has turned to that tremendous figure in our country's retrospect. The West, as keenly as the older sections of our people, has joined in special homage to the memory of Lincoln.

Borne on this tide of thought, there now finds its way into print, for the first time, a Lincoln manuscript, till now kept sacredly in the privacy of a family which has enjoyed the friendship of its illustrious author. By the courtesy of Hon. Henry A. Melvin, a justice of the Supreme court of California, Sunset publishes the text of Lincoln's lecture, "Discoveries and Inventions," and reproduces in facsimile the first three pages of the manuscript.

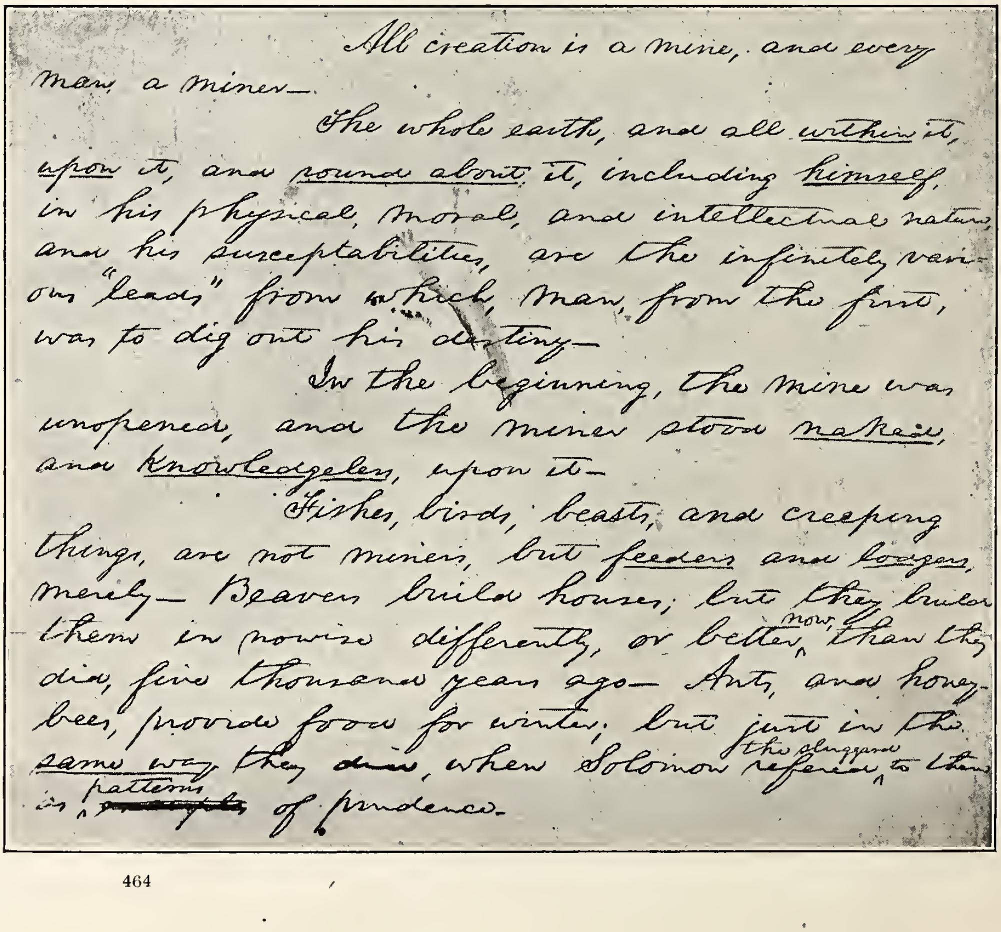
In the fateful year of 1860, the year of his election to the presidency, Lincoln took up, in the pause of his affairs after the long debate with Douglas, the custom of lyceum lecturing, then in great vogue. This lecture on "Discoveries and Inventions" was delivered in towns near his home, Springfield, Illinois, and in Springfield itself on Washington's birthday. Five days later Lincoln made his great speech at Cooper Union, in New York.

The manuscript which follows here was inherited by Judge Melvin from his father, the late Dr. Samuel Houston Melvin, of Oakland, California. Just prior to his death, in 1898, an affidavit by Dr. Melvin was drawn, setting forth the history of the manuscript; that statement is as follows:

MEMORANDUM OF CERTAIN FACTS FOR INFORMATION OF THOSE WHO FOLLOW AFTER

In the month of February, 1861, being at that time a resident of Springfield, Illinois, I called one evening at the residence of my friend, Dr. John Todd. The doctor was an uncle of Mrs. Abraham Lincoln. While there Mr. Lincoln came in, bringing with him a well-filled satchel, remarking as he set it down that it contained his literary bureau. Mr. Lincoln remained some fifteen or twenty minutes, conversing mainly about the details of his prospective trip to Washington the following week, and told us of the arrangements agreed upon for the family to follow him a few days later. When about to leave he handed the grip above referred to to Mrs. Grimsley, the only daughter of Dr. Todd, who was then a widow but who subsequently became the wife of Rev. Dr. John H. Brown, a Presbyterian minister located in Springfield, remarking as he did so that he would leave the bureau in her charge; that if he ever returned to Springfield he would claim it, but if not she might make such disposition of its contents as she deemed proper. A tone of indescribable sadness was noted in the latter part of the sentence. Lincoln had shown me quite a number of letters a few days before, threatening his life, some predicting that he never would be inaugurated, and it was apparent to me that they were making an impression upon his mind, although he tried to laugh the matter off. About five years later the Nation was startled by the announcement of Lincoln's assassination. The corporation of Springfield selected twelve of its citizens to proceed at once to Washington and accompany the remains of the dead President back to his old home. I was one of that number, and shall never forget the indescribable sadness manifested by millions of mourners along the route of travel of the funeral cortege as it wended its way westward over two thousand miles. A few evenings after his body was laid to rest, I again called upon my neighbors, the family of Dr. Todd. Scenes and incidents connected with the assassination and funeral of the dead President were discussed, and the remark made by Lincoln on his last visit to the house was referred to as indicating a presentiment that he would not return alive. This recalled the fact of his having left his so called literary bureau, and his injunction as to its disposition. Mrs. Grimsley brought the grip from the place where it had been stored, and opened it with a view to examining its contents. Among them was found this manuscript, and attached to it by means of a piece of red tape was another of like character. They proved to be manuscripts of two lectures which he had prepared and delivered within a year prior to his election to the presidency—one at Jacksonville, Illinois, and a few days later at Decatur, Illinois; the other a little later at Cook's hall, Springfield, Illinois, at which I was present. Mrs. Grimsley told me to select from the contents of the bureau any one of the manuscripts it contained, and supposing at that time that the two manuscripts belonged to the same lecture, I selected them. On subsequent examination I discovered that while they both treated upon the same subject (Inventions and Discoveries) they were separate lectures. Twenty-five years later I disposed of one of the manuscripts to Mr. Gunther of Chicago. The other it is my hope and desire shall remain in possession of my family and its descendants.

FACSIMILE OF THE LINCOLN MANUSCRIPT

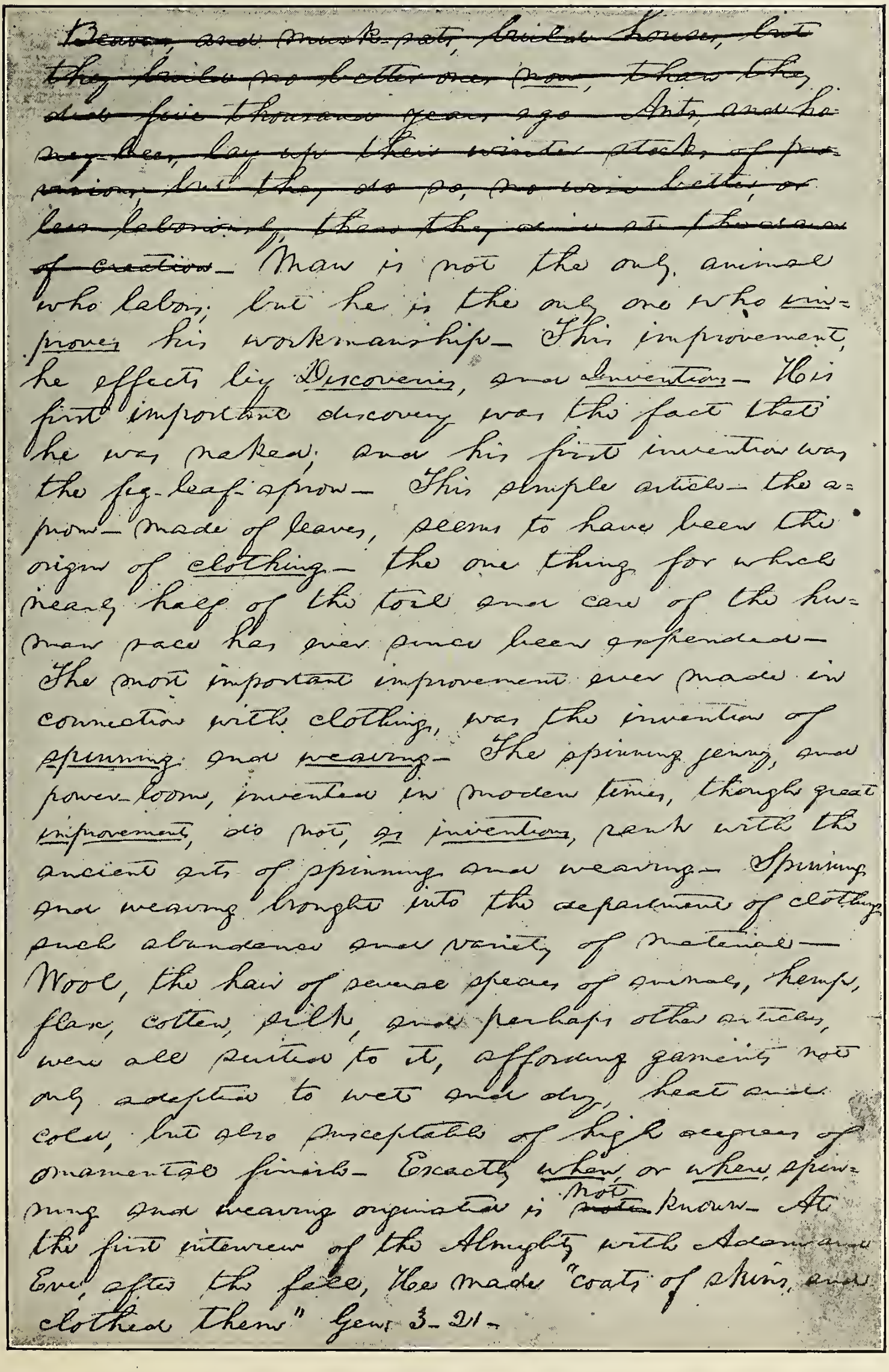


All creation is a mine, and every man a miner—

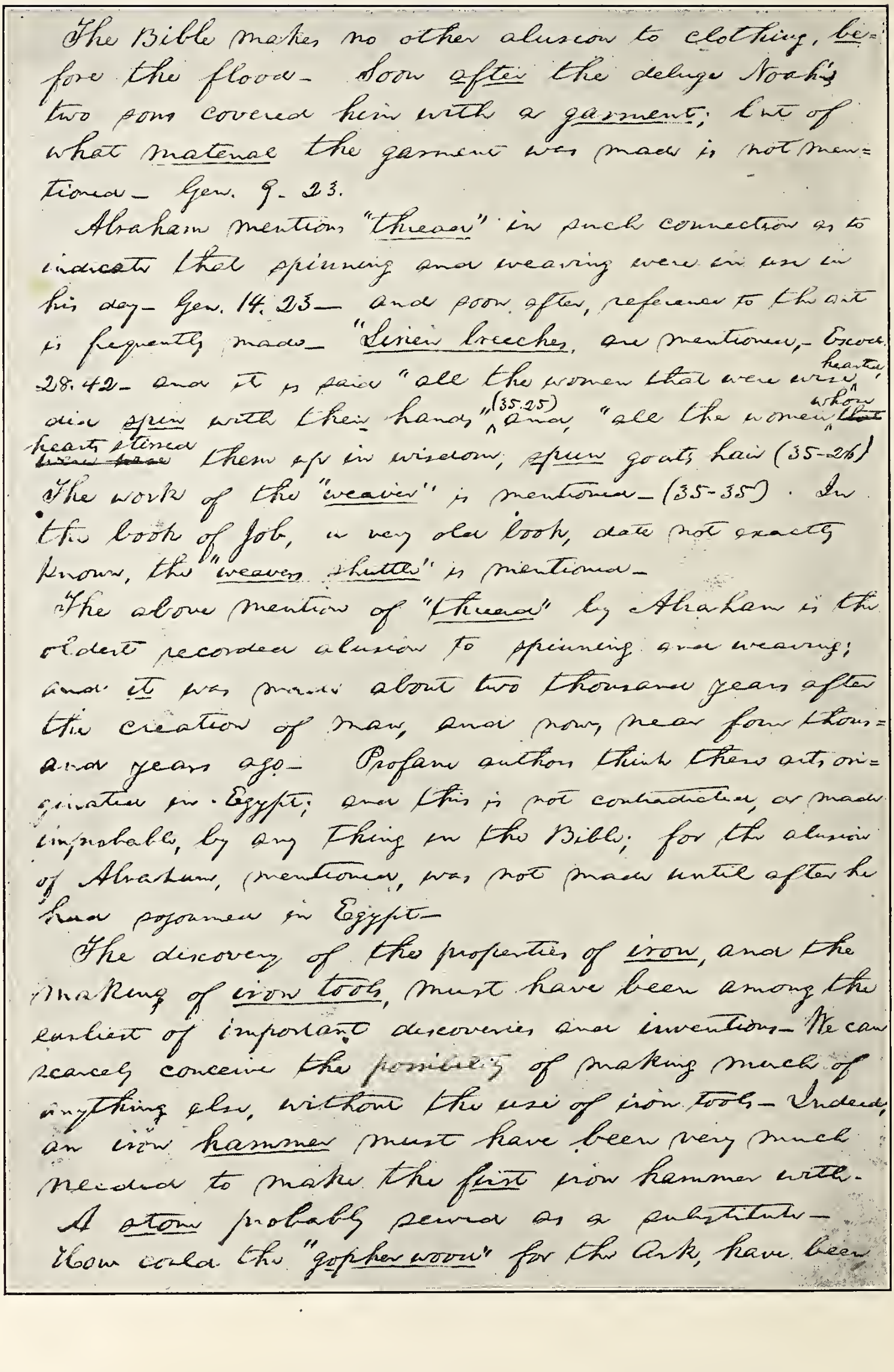
The whole earth, and all within it, upon it, and round about it, including himself, in his physical, moral, and intellectual nature, and his susceptabilities, are the infinitely various "leads" from which, man, from the first, was to dig out his destiny—

In the beginning, the mine was unopened, and the miner stood naked, and knowledgeless, upon it—

Fishes, birds, beasts, and creeping things, are not miners, but feeders and lodgers, merely— Beavers build houses; but they build them in nowise differently, or better, now, than they did, five thousand years ago— Ants, and honey-bees, provide food for winter; but just in the same way they did, when Solomon referred the sluggard to them as patterns [illegible] of prudence—



~~Beavers and musk-rats, build houses, but they build no better ones now, than they did five thousand years ago. Ants, and honey-bees, lay up their winter stocks of provision, but they do so, no wise better, or less laboriously, than they did at the dawn of creation~~— Man is not the only animal who labors; but he is the only one who improves his workmanship— This improvement, he effects by Discoveries, and Inventions— His first important discovery was the fact that he was naked; and his first invention was the fig-leaf-apron— This simple article— the apron— made of leaves, seems to have been the origin of clothing— the one thing for which nearly half of the toil and care of the human race has ever since been expended— The most important improvement ever made in connection with clothing, was the invention of spinning and weaving— The spinning jenny, and power-loom, invented in modern times, though great improvements, do not, as inventions, rank with the ancient arts of spinning and weaving— Spinning and weaving brought into the department of clothing such abundance and variety of material— Wool, the hair of several species of animals, hemp, flax, cotton, silk, and perhaps other articles, were all suited to it, affording garments not only adapted to wet and dry, heat and cold, but also susceptible of high degrees of ornamental finish— Exactly when, or where, spinning and weaving originated is not ~~not~~ known— At the first interview of the Almighty with Adam and Eve, after the fall, He made "coats of skins, and clothed them" Gen: 3-21—



The Bible makes no other alusion to clothing, before the flood— Soon after the deluge Noah's two sons covered him with a garment; but of what material the garment was made is not mentioned— Gen. 9- 23.

Abraham mentions "thread" in such connection as to indicate that spinning and weaving were in use in his day— Gen. 14. 23— and soon after, reference to the art is frequently made— "Linen breeches, are mentioned,— Exod. 28. 42— and it is said "all the women that were wise hearted, did spin with their hands" (35.25) and, "all the women whose ~~that~~ heart stirred ~~were wise~~ them up in wisdom, spun goats hair (35-26) The work of the "weaver" is mentioned— (35-35). In the book of Job, a very old book, date not exactly known, the "weavers shuttle" is mentioned—

The above mention of "thread" by Abraham is the oldest recorded alusion to spinning and weaving; and it was made about two thousand years after the creation of man, and now, near four thousand years ago— Profane authors think these arts originated in Egypt; and this is not contradicted, or made improbable, by any thing in the Bible; for the alusion of Abraham, mentioned, was not made until after he had sojourned in Egypt—

The discovery of the properties of iron, and the making of iron tools, must have been among the earliest of important discoveries and inventions— We can scarcely conceive the possibility of making much of anything else, without the use of iron tools— Indeed, an iron hammer must have been very much needed to make the first iron hammer with— A stone probably served as a substitute— How could the "gopher wood" for the Ark, have been

ALL creation is a mine, and every man a miner. The whole earth, and all within it, upon it, and round about it, including himself, in his physical, moral, and intellectual nature, and his susceptibilities, are the infinitely various "leads" from which man, from the first, was to dig out his destiny.

In the beginning the mine was unopened, and the miner stood naked and knowledgeless upon it. Fishes, birds, beasts, and creeping things are not miners, but feeders and lodgers merely. Beavers build houses; but they build them in nowise differently, or better now, than they did five thousand years ago. Ants and honey bees provide food for winter; but just in the same way as they did when Solomon referred the sluggard to them as patterns of prudence.

Man is not the only animal who labors; but he is the only one who improves his workmanship. This improvement he effects by discoveries and inventions. His first important discovery was the fact that he was naked; and his first invention was the fig-leaf apron. This simple article, the apron made of leaves, seems to have been the origin of clothing—the one thing for which nearly half of the toil and care of the human race has ever since been expended.

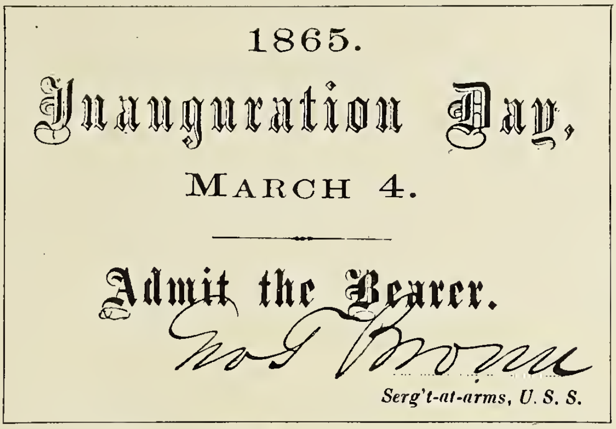
The most important improvement ever made in connection with clothing was the invention of spinning and weaving. The spinning jenny and power loom, invented in modern times, though great improvements, do not, as inventions, rank with the ancient arts of spinning and weaving. Spinning and weaving brought into the department of clothing much abundance and variety of material. Wool, the hair of several species of animals, hemp, flax, cotton, silk, and perhaps other articles, were all suited to it, affording garments not only adapted to wet and dry, heat and cold, but also susceptible of high degrees of ornamental finish.

Exactly when or where spinning and weaving originated is not known. At the first interview of the Almighty with Adam and Eve, after the Fall, He made "coats of skins, and clothed them" (Genesis iii, 21). Tbe Bible makes no other allusion to clothing before the Flood. Soon after the Deluge Noah's two sons covered him with a garment; but of what material the garment was made is not mentioned (Genesis ix, 23).

Abraham mentions "thread" in such connection as to indicate that spinning and weaving were in use in his day (Genesis xiv, 23), and, soon after, reference to the art is frequently made. "Linen breeches" are mentioned (Exodus xxviii, 42), and it is said "all the women that were wise hearted did spin with their hands" (Exodus xxxv, 25) and "all the women whose hearts stirred them up in wisdom spun goats' hair." The work of the weaver is mentioned. In the book of Job, a very old book, date not exactly known, the weavers' shuttle is mentioned. The above mention of thread by Abraham is the oldest recorded allusion to spinning and weaving; and it was made about two thousand years after the creation of man, and now near four thousand years ago. Profane authors think these arts originated in Egypt; and this is not contradicted or made improbable by anything in the Bible; for the allusion of Abraham, mentioned, was not made until after he had sojourned in Egypt.

MRS. LINCOLN, FROM A PHOTOGRAPH SENT BY HER TO MARY LINCOLN MELVIN, NOW MRS. DEWING, OF OAKLAND

The discovery of the properties of iron, and the making of iron tools, must have been among the earliest of



1865.

Inauguration Day,

MARCH 4.

Admit the Bearer.

Geo T Brown

Serg't-at-arms, U. S. S.

DR. MELVIN'S CARD TO THE SECOND INAUGURATION OF PRESIDENT LINCOLN

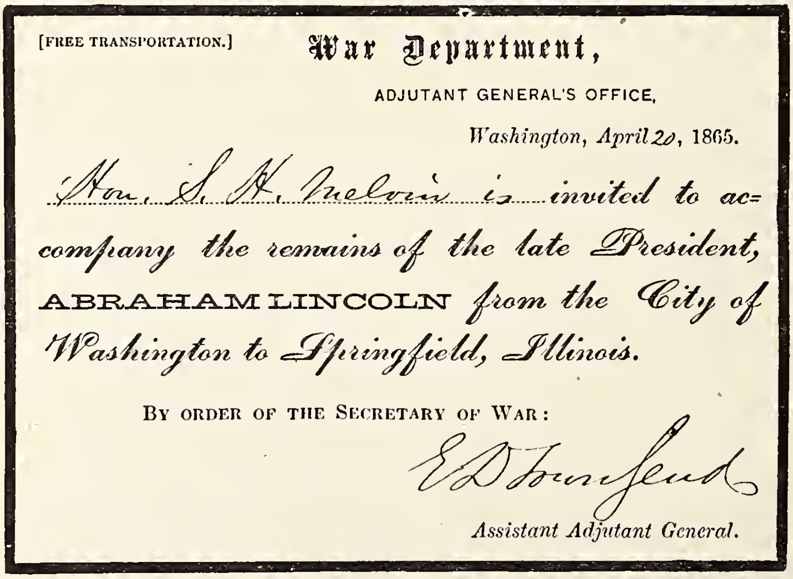
important discoveries and inventions. We can scarcely conceive the possibility of making much of anything else without the use of iron tools. Indeed, an iron hammer must have been very much needed to make the first iron hammer with. A stone probably served as a substitute. How could the "gopher wood" for the Ark have been gotten out without an axe? It seems to me an axe, or a miracle, was indispensable.

Corresponding with the prime necessity for iron, we find at least one very early notice of it. Tubal Cain was "an instructor of every artificer in brass and iron" (Genesis iv, 22). Tubal Cain was the seventh in descent from Adam, and his birth was about one thousand years before the Flood. After the Flood, frequent mention is made of iron, and instruments made of iron. Thus "instrument of iron" (Numbers xxxv, 16); "bedstead of iron" (Deuteronomy iii, 11); "the iron furnace" (Deuteronomy iv, 20), and "iron tool" (Deuteronomy xxvii, 5). At Deuteronomy xix, 5, very distinct mention of "the ax to cut down the tree" is made; and also at Deuteronomy viii, 9, the Promised Land is described as "a land whose stones are iron, and out of whose hills thou mayest dig brass." From the somewhat frequent mention of brass in connection with iron, it is not improbable that brass—perhaps what we now call copper—was used by the ancients for some of the same purposes as iron.

Transportation—the removal of person and goods from place to place—would be an early object, if not a necessity, with man. By his natural powers of locomotion, and without much assistance from discovery and invention, he could move himself about with considerable facility; and even could carry small burthens with him. But very soon he would wish to lessen the labor, while he might at the same time extend and expedite the business. For this object, wheel-carriages and water-crafts—wagons and boats—are the most important inventions.

The use of wheel and axle has been so long known that it is difficult, without reflection, to estimate it at its true value. The oldest recorded allusion to the wheel and axle is the mention of a "chariot" (Genesis xl, 43). This was in Egypt, upon the occasion of Joseph being made governor by Pharaoh. It was about twenty-five hundred years after the creation of Adam. That the chariot then mentioned was a wheel-carriage drawn by animals is sufficiently evidenced by the mention of chariot-wheels (Exodus xiv, 25), and the mention of chariots in connection with horses in the same chapter, verses 9 and 23. So much, at present, for land transportation.

Now, as to transportation by water, I have concluded, without sufficient authority, perhaps, to use the term



[FREE TRANSPORTATION.]

War Department,

ADJUTANT GENERAL'S OFFICE,

Washington, April 20, 1865.

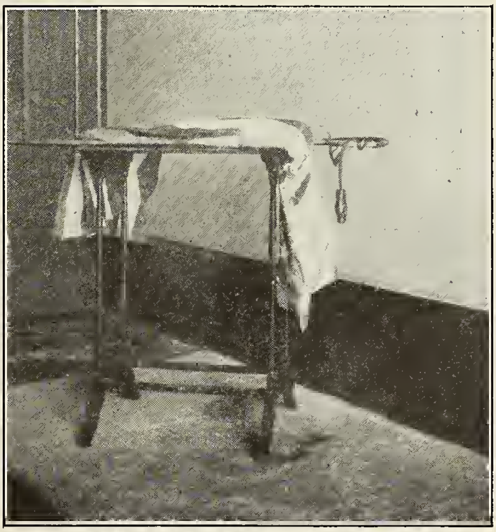
Hon. S. H. Melvin is invited to accompany the remains of the late President, ABRAHAM LINCOLN *from the City of Washington to Springfield, Illinois.*

BY ORDER OF THE SECRETARY OF WAR:

E D Townsend

Assistant Adjutant General.

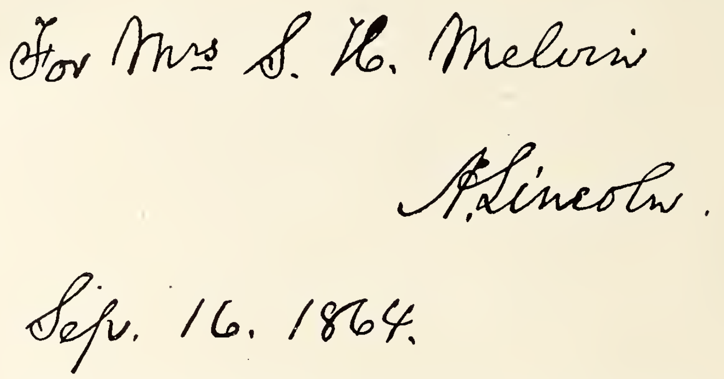
DR. MELVIN'S CARD OF AUTHORITY AS ESCORT OF THE MARTYRED PRESIDENT'S REMAINS "boat" as a general name for all water-craft. The boat is indispensable to navigation. It is not probable that the philosophical principle upon which the use of the boat primarily depends—to wit: the principle that anything will float which cannot sink without displacing more than its own weight of water—was known, or even thought of, before the first boats were made. The sight of a crow standing on a piece of driftwood, floating down the swollen current of a creek or river, might well enough suggest the specific idea to a savage that he could himself get upon a log, or on two logs tied together, and somehow work his way to the opposite shore of the same stream. Such a suggestion, so taken, would be the birth of navigation; and such, not improbably, it really was. The leading idea was thus caught; and whatever came afterwards were but improvements upon and auxiliaries to it.



DR. MELVIN'S CHESS TABLE, ON WHICH HE PLAYED GAMES WITH LINCOLN AND WITH GRANT

As man is a land animal it might be expected he would learn to travel by land somewhat earlier than he would by water. Still the crossing of streams somewhat deep for wading would be an early necessity with him. If we pass by the Ark, which may be regarded as belonging rather to the miraculous than to human invention, the first notice we have of water-craft is the mention of "ships" by Jacob (Genesis xlix, 13). It is not till we reach the book of Isaiah that we meet with the mention of "oars" and "sails."

As man's food—his first necessity—was to be derived from the vegetation of the earth, it was natural that his first care should be directed to the assistance of that vegetation. And accordingly we find that even before



For Mrs S. H. Melvin

A. Lincoln.

Sep. 16. 1864.

LINCOLN'S AUTOGRAPH ON THE OCCASION OF A GIFT TO JUDGE MELVIN'S MOTHER

the Fall the man was put into the Garden of Eden "to dress it, and to keep it." And when afterwards, in consequence of the first transgression, labor was imposed on the race as a penalty—a curse—we find the first-born man—the first heir of the curse—was "a tiller of the ground." This was the beginning of agriculture; and although, both in point of time and of importance, it stands at the head of all branches of human industry, it has derived less direct advantage from discovery and invention than almost any other. The plow, of very early origin, and reaping and threshing machines of modern invention, are, at this day, the principal improvements in agriculture. And even the oldest of these, the plow, could not have been conceived of until a precedent conception had been caught and put into practice. I mean the conception, or idea, of substituting other forces in nature for man's own muscular power. These other forces, as now used, are principally the strength of animals and the power of the wind, of running streams, and of steam.

Climbing upon the back of an animal and making it carry us might not occur to one very readily. I think the back of the camel would never have suggested it. It was, however, a matter of vast importance. The earliest instance of it mentioned is when "Abraham rose up early in the morning and saddled his ass" (Genesis xxii, 3), preparatory to sacrificing Isaac as a burnt-offering, but the allusion to the saddle indicates that riding had been in use some time, for it is quite probable they rode bare-backed, awhile at least, before they invented saddles.

The idea, being once conceived, of riding one species of animals would soon be extended to others. Accordingly we find that when the servant of Abraham went in search of a wife for Isaac, he took ten camels with him; and, on his return trip, "Rebekah arose, and her damsels, and they rode upon the camels, and followed the man." (Genesis xxiv, 61.) The horse, too, as a riding animal, is mentioned early. The Red Sea being safely passed, Moses and the children of Israel sang to the Lord, "the horse and his rider hath he thrown into the sea." (Exodus xv, 1.)

Seeing that animals could bear man upon their back, it would soon occur that they could also bear other burthen. Accordingly we find that Joseph's brethren, on their first visit to Egypt, "laded their asses with the corn, and departed thence." (Genesis xlii, 26.) Also it would occur that animals could be made to draw burthens after them, as well as to bear them upon their backs; and hence plows and chariots came into use early enough to be often mentioned in the books of Moses (Deuteronomy xxii, 10; Genesis xli, 43; Genesis xlvi, 29; Exodus xiv, 25).

Of all the forces of nature, I should think the wind contains the largest amount of motive power—that is, power to move things. Take any given space of the earth's surface—for instance, Illinois; and all the power exerted by all the men, and hearts, and running water, and steam, over and upon it, shall not equal the one-hundredth part of what is exerted by the blowing of the wind over and upon the same space. And yet it has not so far in the world's history become proportionably valuable as a motive power. It is applied extensively, and advantageously, to sail-vessels in navigation. Add to this a few wind-mills and pumps and you have about all.

That as yet no very successful mode of controlling and directing the wind has been discovered, and that, naturally, it moves by fits and starts—now so gently as to scarcely stir a leaf, and now so roughly as to level a forest—doubtless have been the insurmountable difficulties. As yet the wind is an untamed and unharnessed force; and quite possibly one of the greatest discoveries hereafter to be made will be the taming and harnessing of the wind. That the difficulties of controlling this power are very great is quite evident by the fact that they have already been perceived, and struggled with more than three thousand years; for that power was applied to sail-vessels at least as early as the time of the prophet Isaiah.

In speaking of running streams as a motive power, I mean its application to mills and other machinery by means of the water wheel, a thing now well known and extensively used, but of which no mention is made in the Bible, though it is thought to have been in use among the Romans (Am. Enc.—mill), the language of the Saviour, "Two women shall be grinding at the mill, etc.," indicates that even in the populous city of Jerusalem, at that day, mills were operated by hand, having as yet had no other than human power applied to them.

The advantageous use of steam power is, unquestionably, a modern discovery. And yet as much as two thousand years ago the power of steam was not only observed, but an ingenious toy was actually made and put in motion by it, at Alexandria in Egypt. What appears strange is that neither the inventor of the toy, nor anyone else, for so long a time afterwards, should perceive that steam would move useful machinery as well as a toy.

LINCOLN

By Valeria Kelsey

When I remember how he dauntless stood,
Giving himself to stem the civic flood;
How, o'er his head the high waves seemed to meet,
Yet broke and parted, flowing slow about his feet;
When I remember what his face made known,
How the crude clay became the angel in the stone,
I tremble, dimly knowing that God's plan
Found part of its fulfilment in this man.

The mass is man-becoming,—*he* became;
In what he was is our potential fame;
So blended are we all that one brave soul
Cannot achieve the stars but that the whole
Pulses with deeper life, and feels the night
Lift to that morn where all shall walk in light.

LINCOLN LORE

Bulletin of the Lincoln National Life Foundation - - - - - - - - - Dr. Louis A. Warren, Editor.
Published each week by The Lincoln National Life Insurance Company, of Fort Wayne, Indiana.

No. 306 FORT WAYNE, INDIANA February 18, 1935

ABRAHAM LINCOLN'S ADDRESS ON DISCOVERIES AND INVENTIONS

The era of discovery and invention in America is best personified by Thomas A. Edison, one of the many remarkable men whose birthdays occur in February. Recalling Edison's efforts, we are reminded that Abraham Lincoln prepared an address once on the subject of "Discoveries, Inventions, and Improvements," which was one of the two or three popular addresses he is known to have delivered.

The complete address as delivered by Lincoln is not available, but paragraphs from two disconnected manuscripts, containing notes he used, allow us to catch the drift of his argument:

"All creation is a mine, and every man a miner. The whole earth, and all within it, upon it, and round about it, including himself, in his physical, moral, and intellectual nature, and his susceptibilities, are the infinitely various 'leads' from which man, from the first, was to dig out his destiny. In the beginning, the mine was unopened, and the miner stood naked, and knowledgeless, upon it."

"Man is not the only animal who labors; but he is the only one who improves his workmanship. This improvement he effects by Discoveries and Inventions. His first important discovery was the fact that he was naked. . . . The most important improvement ever made in connection with clothing, was the invention of spinning and weaving. . . . . Spinning and weaving brought into the department of clothing such abundance and variety of material . . . . affording garments not only adapted to wet and dry, heat and cold, but also susceptible of high degrees of ornamental finish."

"The discovery of the properties of iron, and the making of iron tools, must have been among the earliest of important discoveries and inventions. We can scarcely conceive of the possibility of making much of anything else, without the use of iron tools."

"Transportation—the removal of person and goods from place to place—would be an early object, if not a necessity, with man . . . . For this object, wheel-carriages, and water-crafts—wagons and boats—are the most important inventions. The use of the wheel and axle has been so long known, that it is difficult, without reflection, to estimate it at its true value."

"Now, as to transportation by water . . . . The sight of a crow standing on a piece of driftwood floating down the swollen current of a creek or river, might well enough suggest the specific idea to a savage, that he could himself get upon a log, or on two logs tied together, and somehow work his way to the opposite shore of the same stream. . . . . The leading idea was thus caught; and whatever came afterwards, were but improvements upon, and auxiliaries to, it."

"As man's food—his first necessity—was to be derived from the vegetation of the earth, it was natural that his first care should be directed to the assistance of that vegetation . . . . This was the beginning of agriculture."

"We have all heard of Young America. He is the most current youth of the age. Some think him conceited and arrogant; but has he not reason to entertain a rather extensive opinion of himself? Is he not the inventor and owner of the present, and sole hope of the future?"

"The great difference between Young America and Old Fogy is the result of discoveries, inventions, and improvements. These, in turn, are the results of observation, reflection, and experiment. For instance, it is quite certain that ever since water has been boiled in covered vessels, men have seen the lids of the vessels rise and fall a little, with a sort of fluttering motion, by force of steam; but so long as this was not specially observed, and reflected, and experimented upon, it came to nothing. At length, however, after many thousand years, some man observes this long-known effect of hot water lifting a pot-lid, and begins a train of reflection upon it . . . . Observation, reflection, and trial give to the world the control of that tremendous and now well-known agent called steam-power."

"The inclination to exchange thoughts with one another is probably an original impulse of our nature . . . . But to carry on such communications, some instrumentality is indispensable. Accordingly, speech—articulate sounds rattled off from the tongue—was used by our first parents. . . . . Speech, then, by enabling different individuals to interchange thoughts, and thereby to combine their powers of observation and reflection, greatly facilitates useful discoveries and inventions. What one observes, and would himself infer nothing from, he tells to another, and that other at once sees a valuable hint in it. A result is thus reached which neither alone would have arrived at."

"But speech alone, valuable as it ever has been and is, has not advanced the condition of the world much . . . . Writing, the art of communicating thoughts to the mind through the eye, is the great invention of the world. . . . . When we remember that words are sounds merely, we shall conclude that the idea of representing those sounds by marks, so that whoever should at any time after see the marks would understand what sounds they meant, was a bold and ingenious conception, not likely to occur to one man in a million in the run of a thousand years."

"When writing was invented, any important observation likely to lead to a discovery had at least a chance of being written down, and consequently a little chance of never being forgotten, and of being seen and reflected upon by a much greater number of persons; and thereby the chances of a valuable hint being caught proportionately augmented. By this means the observation of a single individual might lead to an important invention years, and even centuries, after he was dead. In one word, by means of writing, the seeds of invention were more permanently preserved and more widely sown . . . . At length printing came. It gave ten thousand copies of any written matter quite as cheaply as ten were given before; and consequently a thousand minds were brought into the field where there was but one before. This was a great gain—and history shows a great change corresponding to it—in point of time."

"The capacity to read could not be multiplied as fast as the means of reading . . . . It is very probable—almost certain—that the great mass of men at that time were utterly unconscious that their condition or their minds were capable of improvement . . . . To emancipate the mind from this false underestimate of itself is the great task which printing came into the world to perform . . . . It is, in this connection, a curious fact that a new country is most favorable—almost necessary—to the emancipation of thought, and the consequent advancement of civilization and the arts . . . . It is in this view that I have mentioned the discovery of America as an event greatly favoring and facilitating useful discoveries and inventions. Next came the patent laws. These began in England in 1624, and in this country with the adoption of our Constitution. Before then any man (might) instantly use what another man had invented, so that the inventor had no special advantage from his invention. The patent system changed this, secured to the inventor for a limited time exclusive use of his inventions, and thereby added the fuel of interest to the fire of genius in the discovery and production of new and useful things."

☒ The Pantagraph

Lincoln's 1858 speech cited at ribbon-cutting of newest wind farm

By Kevin Barlow | kbarlow@pantagraph.com | Posted: Wednesday, July 22, 2009 12:05 am

EMDEN -- It may not be his best-known composition, but a little-known speech Abraham Lincoln delivered in 1858 in Bloomington seemed apt to the developers of a wind farm named in his honor and dedicated Tuesday near Emden.

"Of all the forces of nature, the wind contains the largest amount of motive power," Lincoln wrote in the speech later restructured into a poem called "Farming the Wind."

"As yet the wind is an untamed and unharnessed force; and quite possibly one of the greatest discoveries hereafter to be made will be the taming and harnessing of the wind." Apr 6, 1858

More than 150 years later, Lincoln's vision is embodied by the $200 million Rail Splitter Wind Farm, a scattering of 67 wind turbines, each 260 feet tall, across 11,000 acres in Logan and Tazewell counties. On Tuesday, the memory of the 16th president played a role in the wind farm's ribbon-cutting ceremony that drew about 350 people to a field near Emden.

"It's very fitting that we are so close to all of this history of Abraham Lincoln and he was able to see the value of wind energy 150 years ago," said Gabriel Alonso, CEO of the developer, Texas-based Horizon Wind Energy. "Everyone in this area is so proud of what he accomplished and this proves just how great his foresight really was."

The ceremony included speeches from state Sen. Bill Brady, R-Bloomington, Logan County Board member Bill Martin, Tazewell County Farm Bureau manager Doug Godke, landowners and other officials.

"This is like crossing the finish line of a big journey or race," said Horizon project manager John Fulton. "We didn't finish it as quickly as we had hoped, but there is a lot to do in completing a project like this.

"But it's a reality now and will serve the neighboring communities well, long into the future."

The wind farm, which began producing energy in June, is expected to produce enough electricity to power approximately 30,000 average Illinois homes each year.

Martin said the addition of a wind farm was a good idea. He said it generates electricity from a free, endless energy source that doesn't pollute or produce harmful waste.

"Yes, there were some who opposed it, but this is something that just makes sense," he said.

Rail Splitter, using a nickname for Lincoln, is the company's 16th wind farm.

Construction created about 200 jobs, developers said. Once it is fully operational, it will create 10 to 15 permanent, full-time jobs and is projected to yield about $234,000 in tax revenue the first year, according to previous Horizon estimates.

"One of the byproducts of this wind farm is the fact that this project brought community leaders together, and they are in agreement on something," Brady said. "The economy in Illinois has been struggling, but this will provide Illinois with a long-term competitive advantage and will lead to business development and job creation, which, in turn, allows families to continue to be here."

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First Lecture on Discoveries and Inventions [1]

[April 6, 1858]

All creation is a mine, and every man, a miner.

The whole earth, and all *within* it, *upon* it, and *round about* it, including *himself*, in his physical, moral, and intellectual nature, and his susceptabilities, are the infinitely various ``leads" from which, man, from the first, was to dig out his destiny.

In the beginning, the mine was unopened, and the miner stood *naked*, and *knowledgeless*, upon it.

Fishes, birds, beasts, and creeping things, are not miners, but *feeders* and *lodgers*, merely. Beavers build houses; but they build them in nowise differently, or better now, than they did, five thousand years ago. Ants, and honey-bees, provide food for winter; but just in the *same way* they did, when Solomon refered the sluggard to them as patterns of prudence. [2]

Man is not the only animal who labors; but he is the only one who *improves* his workmanship. This improvement, he effects by *Discoveries*, and *Inventions*. His first important discovery was the fact that he was naked; and his first invention was the fig-leaf-apron. This simple article---the apron---made of leaves, seems to have been the origin of *clothing*---the one thing for which nearly half of the toil and care of the human race has ever since been expended. The most important improvement ever made in connection with clothing, was the invention of *spinning* and *weaving*. The spinning jenny, and power-loom, invented in modern times, though great *improvements*, do not, *as inventions*, rank with the ancient arts of spinning and weaving. Spinning and weaving brought into the department of clothing such abundance and variety of material. Wool, the hair of several species of animals, hemp, flax, cotten, silk, and perhaps other articles, were all suited to it, affording garments not only adapted to wet and dry, heat and cold, but also susceptable of high degrees of ornamental finish. Exactly *when*, or *where*, spinning and weaving originated is not known. At the first interview of the Almighty with Adam and Eve, after the fall, He made ``coats of skins, and clothed them" Gen: 3-21.

The Bible makes no other alusion to clothing, *before* the flood. Soon *after* the deluge Noah's two sons covered him with a *garment*; but of what *material* the garment was made is not mentioned. Gen. 9-23.

Abraham mentions ``*thread*" in such connection as to indicate that spinning and weaving were in use in his day---Gen. 14.23--- and soon after, reference to the art is frequently made. ``*Linen breeches*, ["] are mentioned,---Exod. 28.42---and it is said ``all the women that were wise hearted, did *spin* with their hands" (35-25) and, ``all the women whose hearts stirred them up in wisdom, *spun* goat's hair" (35-26). The work of the ``*weaver*" is mentioned--- (35-35). In the book of Job, a very old book, date not exactly known, the ``*weavers shuttle*" is mentioned.

The above mention of ``*thread*" by Abraham is the oldest recorded alusion to spinning and weaving; and *it* was made about two thousand years after the creation of man, and now, near four thousand years ago. Profane authors think these arts originated in Egypt; and this is not contradicted, or made improbable, by any thing in the Bible; for the alusion of Abraham, mentioned, was not made until after he had sojourned in Egypt.

The discovery of the properties of *iron*, and the making of *iron tools*, must have been among the earliest of important discoveries and inventions. We can scarcely conceive the possibility of making much of anything else, without the use of iron tools. Indeed, an iron *hammer* must have been very much needed to make the *first* iron hammer with. A *stone* probably served as a substitute. How could the ``*gopher wood*" for the Ark, have been gotten out without an axe? It seems to me an axe, or a miracle, was indispensable. Corresponding with the prime necessity for iron, we find at least one very early notice of it. Tubal-cain was ``an instructer of every artificer in *brass* and *iron*["]---Gen: 4-22. Tubal-cain was the seventh in decent from Adam; and his birth was about one thousand years before the flood. *After* the flood, frequent mention is made of *iron*, and *instruments* made of iron. Thus ``instrument of iron" at Num: 35-16; ``bed-stead of iron" at Deut. 3-11---- ``the iron furnace ["] at 4-20--- and ``iron tool" at 27-5. At 19-5--- very distinct mention of ``the ax to cut down the tree" is made; and also at 8-9, the promised land is described as ``a land whose stones are iron, and out of whose hills thou mayest dig brass." From the somewhat frequent mention of brass in connection with iron, it is not improbable that brass---perhaps what we now call copper---was used by the ancients for some of the same purposes as iron.

Transportation---the removal of person, and goods---from place to place---would be an early *object*, if not a *necessity*, with man. By his natural powers of locomotion, and without much assistance from Discovery and invention, he could move himself about with considerable facility; and even, could carry small burthens with him. But very soon he would wish to lessen the labor, while he might, at the same time, extend, and expedite the business. For this object, wheel-carriages, and water-crafts---wagons and boats---are the most important inventions. The use of the wheel & axle, has been so long known, that it is difficult, without reflection, to estimate it at it's true value. [3]

The oldest recorded allusion to the wheel and axle is the mention of a ``chariot" Gen: 41-43. This was in Egypt, upon the occasion of Joseph being made Governor by Pharaoh. It was about twentyfive hundred years after the creation of Adam. That the chariot then mentioned was a wheel-carriage drawn by animals, is sufficiently evidenced by the mention of chariot-*wheels*, at Exod. 14-25, and the mention of chariots in connection with *horses*, in the same chapter, verses 9 & 23. So much, at present, for land-transportation.

Now, as to transportation by *water*, I have concluded, without sufficient authority perhaps, to use the term ``boat" as a general name for all water-craft. The boat is indispensable to navigation. It is not probable that the philosophical principle upon which the use of the boat primarily depends---towit, the *principle*, that any thing will float, which can not sink without displacing more than it's own *weight* of water---was known, or even thought of, before the first boats were made. The sight of a crow standing on a piece of drift-wood floating down the swolen current of a creek or river, might well enough suggest the specific idea to a savage, that he could himself get upon a log, or on two logs tied together, and somehow work his way to the opposite shore of the same stream. Such a suggestion, so taken, would be the birth of navigation; and such, not improbably, it really was. The leading idea was thus caught; and whatever came afterwards, were but improvements upon, and auxiliaries to, it.

As man is a land animal, it might be expected he would learn to travel by land somewhat earlier than he would by water. Still the crossing of streams, somewhat too deep for wading, would be an early necessity with him. If we pass by the Ark, which may be regarded as belonging rather to the *miracalous*, than to *human* invention the first notice we have of water-craft, is the mention of ``ships" by Jacob---Gen: 49-13. It is not till we reach the book of Isaiah that we meet with the mention of ``oars" and ``sails."

As mans *food*---his first necessity---was to be derived from the vegitation of the earth, it was natural that his first care should be directed to the assistance of that vegitation. And accordingly we find that, even before the fall, the man was put into the garden of Eden ``to dress it, and to keep it." And when afterwards, in consequence of the first transgression, *labor* was imposed on the race, as a *penalty*---a *curse*---we find the first born man---the first heir of the curse---was ``a tiller of the ground." This was the beginning of agriculture; and although, both in point of time, and of importance, it stands at the head of all branches of human industry, it has derived less direct advantage from Discovery and Invention, than almost any other. The plow, of very early origin; and reaping, and threshing, machines, of modern invention are, at this day, the principle improvements in agriculture. And even the oldest of these, the plow, could not have been conceived of, until a precedent conception had been caught, and put into practice---I mean the conception, or idea, of substituting other forces in nature, for man's own muscular power. These other forces, as now used, are principally, the *strength* of animals, and the *power* of the wind, of running streams, and of steam.

Climbing upon the back of an animal, and making it carry us,

might not, occur very readily. I think the back of the camel would never have suggested it. It was, however, a matter of vast importance.

The earliest instance of it mentioned, is when ``Abraham rose up early in the morning, and saddled his ass,["] Gen. 22-3 preparatory to sacraficing Isaac as a burnt-offering; but the allusion to the *saddle* indicates that riding had been in use some time; for it is quite probable they rode bare-backed awhile, at least, before they invented saddles.

The *idea*, being once conceived, of riding *one* species of animals, would soon be extended to others. Accordingly we find that when the servant of Abraham went in search of a wife for Isaac, he took ten *camels* with him; and, on his return trip, ``Rebekah arose, and her damsels, and they rode upon the camels, and followed the man" Gen 24-61[.]

The *horse*, too, as a riding animal, is mentioned early. The Redsea being safely passed, Moses and the children of Israel sang to the Lord ``the *horse*, and his *rider* hath he thrown into the sea." Exo. 15-1.

Seeing that animals could bear *man* upon their backs, it would soon occur that they could also bear other burthens. Accordingly we find that Joseph's bretheren, on their first visit to Egypt, ``laded their asses with the corn, and departed thence" Gen. 42-26.

Also it would occur that animals could be made to *draw* burthens *after* them, as well as to bear them upon their backs; and hence plows and chariots came into use early enough to be often mentioned in the books of Moses---Deut. 22-10. Gen. 41-43. Gen. 46-29. Exo. 14-25[.]

Of all the forces of nature, I should think the *wind* contains the largest amount of *motive power*---that is, power to move things. Take any given space of the earth's surface---for instance, Illinois---- and all the power exerted by all the men, and beasts, and running-water, and steam, over and upon it, shall not equal the one hundredth part of what is exerted by the blowing of the wind over and upon the same space. And yet it has not, so far in the world's history, become proportionably *valuable* as a motive power. It is applied extensively, and advantageously, to sail-vessels in navigation. Add to this a few wind-mills, and pumps, and you have about all. That, as yet, no very successful mode of *controlling*, and *directing* the wind, has been discovered; and that, naturally, it moves by fits and starts---now so gently as to scarcely stir a leaf, and now so roughly as to level a forest---doubtless have been the insurmountable difficulties. As yet, the wind is an *untamed*,

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and *unharnessed* force; and quite possibly one of the greatest discoveries hereafter to be made, will be the taming, and harnessing of the wind. That the difficulties of controlling this power are very great is quite evident by the fact that they have already been perceived, and struggled with more than three thousand years; for that power was applied to sail-vessels, at least as early as the time of the prophet Isaiah.

In speaking of *running streams*, as a motive power, I mean it's application to mills and other machinery by means of the ``*water wheel*"---a thing now well known, and extensively used; but, of which, no mention is made in the bible, though it is thought to have been in use among the romans---(Am. Ency. tit---Mill) [.] The language of the Saviour ``Two women shall be grinding at the mill &c" indicates that, even in the populous city of Jerusalem, at that day, mills were operated by hand---having, as yet had no other than human power applied to them.

The advantageous use of *Steam-power* is, unquestionably, a modern discovery.

And yet, as much as two thousand years ago the power of steam was not only observed, but an ingenius toy was actually made and put in motion by it, at Alexandria in Egypt.

What appears strange is, that neither the inventor of the toy, nor any one else, for so long a time afterwards, should perceive that steam would move *useful* machinery as well as a toy. [4]

Annotation

[1] AD, owned by Meisei University, Toyoko. In 1865, Dr. Samuel H. Melvin, at the time a resident of Springfield, received the manuscript along with the manuscript of the second lecture on the same subject (*vide infra*, February 11, 1859) from ``aunt Lizzie" Grimsley (widow of Harrison J. Grimsley and daughter of Dr. John Todd), from the collection of papers which Lincoln had left with her before departing from Springfield in 1861. The manuscript of the

second lecture was sold by Dr. Melvin to Charles Gunther, Chicago, Illinois; the first was kept in his own possession. This first lecture was delivered at Bloomington before the Young Men's Association on April 6, 1858, and was reported in the Bloomington *Pantagraph*, April 9, 1858, sufficiently to establish the precedence of this version over that of the second lecture as revised and delivered on February 11, 1859.

[2] Lincoln deletes ``examples,'' inserts ``patterns,'' and deletes the following sentence which stood first in the next paragraph: ``Beavers, and musk-rats, build houses, but they build no better ones *now*, than they did five thousand years ago. Ants, and honey-bees, lay up their winter stocks of provisions; but they do so, no wise better, or less laboriously, than they did at the dawn of creation.''

[3] The following passage has been deleted by Lincoln at this point: ``But let us immagine, for a moment, that all the wheels are locked forever; and we shall at once conclude that the world is num[b]ed. A common jumper, made of hickory poles, with fifty cents worth of labor, would then be worth more than the President's carriage, and even the largest train of Railroad cars in existence. Indeed the Railroad itself would be utterly worthless. That wagon load of wheat which was to have gone to the river to-morrow, can not go; and the barrel of salt which was to have been brought by the return trip, can not come. Aunt Lizzie's pleasure trip to New-York, Boston, and Niagara Falls, is entirely `*done for*[.]' More particular alusion will hereafter be made to the wheel & axle.''

[4] The manuscript ends abruptly at the top of a page. Probably there was more to the lecture which Lincoln utilized in his revised version (*q.v.*, February 11, 1859, *infra*).

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